

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/10547

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ G03F7/42, H01L21/027, H01L21/304, H05K3/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ G03F7/42, H01L21/027, H01L21/304, H05K3/26

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2003
Kokai Jitsuyo Shinan Koho 1971-2003 Toroku Jitsuyo Shinan Koho 1994-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/33613 A2 (SUPERCritical SYSTEMS, INC.), 10 May, 2001 (10.05.01), Full text; all drawings	1-36, 40-49, 51-60, 64, 67, 70-73
Y	& EP 1226603 A & JP 2003-513342 A	37-39, 50, 61-63, 65, 66, 68, 69
X	WO 01/29284 A1 (ARCH SPECIALTY CHEMICALS, INC.), 26 April, 2001 (26.04.01), Full text	1-36, 40-49, 51-56, 58, 64, 67, 70-73
Y	& EP 1141444 A & US 2001/32829 A1 & US 6361712 B1 & JP 2003-512741 A	37-39, 50, 57, 59-63, 65, 66, 68, 69

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

04 November, 2003 (04.11.03)

Date of mailing of the international search report

18 November, 2003 (18.11.03)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6265309 B1 (Mitsubishi Gas Chemicals Co., Inc.), 24 July, 2001 (24.07.01), Full text; all drawings & JP 11-323394 A	1-36, 40-49, 51-60, 62, 64, 65, 67, 70-73 37-39, 50, 61, 63, 66, 68, 69
Y	JP 2002-110632 A (Sony Corp.), 12 April, 2002 (12.04.02), Par. No. [0030] (Family: none)	37, 38 1-36, 39-73
Y	JP 7-302744 A (Toshiba Corp.), 14 November, 1995 (14.11.95), Par. Nos. [0006], [0012], [0020] (Family: none)	39, 68, 69 1-38, 40-67, 70-73
Y	WO 01/74985 A1 (3M INNOVATIVE PROPERTIES CO.), 11 October, 2001 (11.10.01), Page 5, line 31; Page 6, lines 16 to 23 & US 6372700 B1 & EP 1268734 A & JP 2003-529925 A	50, 61 1-49, 51-60, 62-73
Y	JP 2001-330970 A (Daikin Industries, Ltd.), 30 November, 2001 (30.11.01), Par. Nos. [0005], [0012] & WO 01/81525 A1 & EP 1277830 A	63, 64 1-62, 65-73
Y	JP 2000-56479 A (Showa Denko Kabushiki Kaisha), 25 February, 2000 (25.02.00), Par. No. [0017] (Family: none)	66 1-65, 67-73

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:

because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims 1-19 and 35-70 claim inventions sharing technical features in the resist removing solution for low-k film comprising at least one member selected from the group consisting of organic acids and organic solvents together with hydrogen fluoride (HF).

2. Claims 20-34 and 71-73 claim inventions sharing technical features in the via hole or capacitor cleaning solution comprising at least one member selected from the group consisting of organic acids and organic solvents together with hydrogen fluoride (HF).

In this connection, the resist removing solution and via hole or capacitor (continued to extra sheet)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest. ☐ The additional search fees were accompanied by the applicant's protest.

☒ No protest accompanied the payment of additional search fees.

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Continuation of Box No. II of continuation of first sheet(1)

cleaning solution each comprising at least one member selected from the group consisting of organic acids and organic solvents together with hydrogen fluoride (HF) are described in JP 2002-100599 A, JP 2001-358134 A, JP 2001-332526 A and JP 2001-330970 A and are not contributory over the prior art.

Therefore, it cannot be recognized that there are special technical features as prescribed in PCT Rule 13.2 among the group of claims of items 1. and 2. above, and hence they fail to satisfy the requirement of unity of invention.